

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2002-NM-248-AD; Amendment 39-12904; AD 2002-19-51 R1]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Boeing Model 737 Series Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule; request for comments.

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**SUMMARY:** This document publishes in the Federal Register an amendment adopting airworthiness directive (AD) 2002-19-51 R1 that was sent previously to all known U.S. owners and operators of all Boeing Model 737 series airplanes by individual notices. This AD revises existing AD 2002-19-51 that currently requires, for certain airplanes, an inspection to determine the serial number of certain flight control modules (FCM), having P/N 65-44891-7, and corrective actions if necessary. That AD was prompted by reports of failed FCMs, which resulted in sluggish response of the aileron, elevator, and rudder surfaces. This AD revises the existing AD to provide operators with additional options for compliance, to specify the serial numbers of the affected compensator, and to make other editorial changes. The actions specified by this AD are intended to prevent operation with one failed FCM, which could result in reduced controllability of the airplane, or with two failed FCMs, which could result in loss of control of the airplane.

**DATES:** Effective October 15, 2002, to all persons except those persons to whom it was made immediately effective by emergency AD 2002-19-51 R1, issued on September 18, 2002, which contained the requirements of this amendment.

Comments for inclusion in the Rules Docket must be received on or before December 6, 2002.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-248-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227-1232. Comments may also be sent via the Internet using the following address: [9-anm-iarcomment@faa.gov](mailto:9-anm-iarcomment@faa.gov). Comments sent via fax or the Internet must contain "Docket No. 2002-NM-248-AD" in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

Information pertaining to this AD may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington.

**FOR FURTHER INFORMATION CONTACT:** Kenneth W. Frey, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2673; fax (425) 227-1181.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

On September 13, 2002, the FAA issued airworthiness directive (AD) 2002-19-51, applicable to all Boeing Model 737 series airplanes, to require, for certain airplanes, an inspection to determine whether flight control modules (FCM) having part number (P/N) 65-44891-7 with serial number (S/N) 8726 or greater (hereafter referred to as "suspect FCMs") are installed, and corrective actions if necessary. The corrective actions include replacing the suspect FCM(s) with a serviceable FCM(s) having P/N 65-44891-7 with a S/N less than 8726, and revising the FAA-approved Airplane Flight Manual (AFM) to include procedures for certain airplanes to identify failures of suspect FCMs before dispatch and to provide the flightcrew with operating procedures in the event of failure of an FCM in flight. The AD also requires certain operators to submit inspection findings to the FAA. That action was prompted by reports of failed FCMs, which resulted in sluggish response of the aileron, elevator, and rudder surfaces. The actions required by that AD are intended to prevent operation with one failed FCM, which could result in reduced controllability of the airplane, or with two failed FCMs, which could result in loss of control of the airplane.

### **Clarification of Affected Airplanes**

Because of reports of some operators misinterpreting the applicability of AD 2002-19-51, we find that clarification is necessary. Operators should note that this AD affects all Boeing Model 737 series airplanes. Operators of Model 737-600, -700, -700C, -800, and -900 series airplanes, having line numbers 1136 through 1230 inclusive, are subject to all requirements of this AD. However, operators of all Model 737-100, -200, -200C, -300, -400, and -500 series airplanes; and Model 737-600, -700, -700C, -800, and -900 series airplanes, having line numbers other than 1136 through 1230 inclusive; are only required to adhere to paragraphs (j) and (k) of this AD (i.e., parts installation paragraphs) to ensure that spare replacement FCMs and compensators identified in those paragraphs are not installed on any Model 737 series airplane in the future. No change to this AD is necessary in this regard.

### **Actions Since Issuance of Previous Rule**

Since the issuance of AD 2002-19-51, the FAA has approved an alternative method of compliance (AMOC) for the replacement required by paragraphs (d)(1), (d)(2), and (h) of that AD. The AMOC allows FCMs having P/Ns other than 65-44891-7 that are approved for installation on Boeing Model 737-600, -700, -700C, -800, and -900 series airplanes to be installed during the replacements required by those paragraphs. In addition, we have determined that a suspect FCM can continue to be used once the compensator has been replaced with an airworthy compensator. Therefore, we have revised those paragraphs and paragraph (j) of this AD accordingly.

We also have determined that replacement of all suspect FCMs with airworthy FCMs terminates the requirements of paragraphs (e) through (g) of this AD. Therefore, we have revised paragraphs (c) and (d)(1) of this AD accordingly.

We also have revised paragraph (h) of this AD to state explicitly that suspect FCMs that fail during operation of the airplane must be replaced before further flight.

AD 2002-19-51 contains a typographical error in paragraph (k). That paragraph refers to "compensator having P/N 10-605603-3," which does not exist. The correct P/N of that compensator is "P/N 10-60560-3." In addition, the airplane manufacturer has provided us with the specific S/Ns (i.e., 20478A or greater) of the suspect compensator, P/N 10-60560-3. Therefore, we have revised paragraph (k) of this AD accordingly to prohibit installation of only these S/Ns. We also clarified that unairworthy compensators cannot be installed on any FCM.

### **Explanation of Requirements of the Rule**

Since the unsafe condition described is likely to exist or develop on other airplanes of the same type design, the FAA issued emergency AD 2002-19-51 R1 to prevent operation with one failed FCM, which could result in reduced controllability of the airplane, or with two failed FCMs, which could result in loss of control of the airplane. This AD revises AD 2002-19-51 to continue to require, for certain airplanes, an inspection to determine the S/N of the FCMs having P/N 65-44891-7 and corrective actions if necessary. This AD also continues to require certain operators to submit inspection findings to Boeing. This AD revises the existing AD to provide operators with additional options for compliance, to specify the serial numbers of the affected compensator, and to make other editorial changes.

### **Interim Action**

This is considered to be interim action until final action is identified, at which time the FAA may consider further rulemaking.

### **Determination of Rule's Effective Date**

Since it was found that immediate corrective action was required, notice and opportunity for prior public comment thereon were impracticable and contrary to the public interest, and good cause existed to make the AD effective immediately by individual notices issued on September 18, 2002, to all known U.S. owners and operators of all Boeing Model 737 series airplanes. These conditions still exist, and the AD is hereby published in the Federal Register as an amendment to §39.13 of the Federal Aviation Regulations (14 CFR 39.13) to make it effective to all persons.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NM-248-AD." The postcard will be date stamped and returned to the commenter.

### **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "[www.airweb.faa.gov/rgl](http://www.airweb.faa.gov/rgl)"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2002-19-51 R1 Boeing:** Amendment 39-12904. Docket 2002-NM-248-AD. Revises AD 2002-19-51.

**Applicability:** All Model 737-100, -200, -200C, -300, -400, -500, -600, -700, -700C, -800, and -900 series airplanes; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (l) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent operation with one failed flight control module (FCM), which could result in reduced controllability of the airplane, or with two failed FCMs, which could result in loss of control of the airplane, accomplish the following:

## Inspection

(a) For Model 737-600, -700, -700C, -800, and -900 series airplanes, having line numbers 1136 through 1230 inclusive: Before further flight after the effective date of this AD, do an inspection to determine the serial number (S/N) of both FCMs having part number (P/N) 65-44891-7.

## Neither FCM Has S/N 8726 or Greater

(b) If neither FCM has S/N 8726 or greater (hereafter referred to as a "suspect FCM"), no further action is required by this AD, except for the requirements specified in paragraphs (j) and (k) of this AD.

## FCM(s) Has S/N 8726 or Greater

(c) If one FCM is a suspect FCM, the airplane may continue to be operated, but within 24 hours after accomplishing the inspection required by paragraph (a) of this AD, do the actions specified in paragraphs (e) through (g) of this AD. Replacement of the suspect FCM with an FCM identified in paragraph (c)(1), (c)(2), or (c)(3) of this AD terminates the requirements of paragraphs (e) through (g) of this AD.

- (1) A serviceable FCM having P/N 65-44891-7 with a S/N less than 8726.
- (2) A serviceable FCM having a P/N other than 65-44891-7 that is approved for installation on Boeing Model 737-600, -700, -700C, -800, and -900 series airplanes.
- (3) A suspect FCM on which the compensator has been replaced with a serviceable compensator, approved for installation on FCM, PN 65-44891-7, other than a compensator having P/N 10-60560-3 with SN 20478A or greater.

(d) If both FCMs are suspect FCMs, do the actions specified in either paragraph (d)(1) or (d)(2) of this AD.

(1) Before further flight, replace one of the FCMs with an FCM identified in paragraph (c)(1), (c)(2), or (c)(3) of this AD. Thereafter, the airplane may continue to be operated, but within 24 hours after accomplishing the inspection required by paragraph (a) of this AD, do the actions specified in paragraphs (e) through (g) of this AD. Replacement of both suspect FCMs with FCMs identified in paragraph (c)(1), (c)(2), or (c)(3) of this AD terminates the requirements of paragraphs (e) through (g) of this AD.

(2) Before further flight, replace both FCMs with FCMs identified in paragraph (c)(1), (c)(2), or (c)(3) of this AD. Thereafter, no further action is required by this AD, except for the requirements specified in paragraphs (j) and (k) of this AD.

(e) If required by paragraph (c), (d)(1), or (m) of this AD: Revise the Normal Procedures Section of the FAA-approved Airplane Flight Manual (AFM) to include the following (this may be accomplished by inserting this AD into the AFM):

### **"Pre-Flight Flight Control Module (FCM) Checks**

These checks can be performed any time after the Electric Hydraulic Pump A and B Switches are positioned ON and prior to Engine Start. Ensure ground personnel are clear of all control surfaces. If Minimum Equipment List (MEL) dispatch with one or both autopilot channels inoperative is planned, it is acceptable not to perform the check on the inoperative channel(s).

#### *Flight Control Switch Check*

1. Ensure FLT CONTROL A & B switches are ON
2. FLT CONTROL A Switch \* \* \* OFF
  - Verify Flight Controls LOW PRESSURE Light illuminates within 2 seconds.
3. FLT CONTROL A Switch \* \* \* ON
  - Verify Flight Control LOW PRESSURE Light extinguishes.
4. FLT CONTROL B Switch \* \* \* OFF
  - Verify Flight Controls LOW PRESSURE Light illuminates within 2 seconds.
5. FLT CONTROL B Switch \* \* \* ON
  - Verify Flight Controls LOW PRESSURE Light extinguishes.

**Note:** Failure of the Flight Control LOW PRESSURE Light to illuminate within 2 seconds may indicate a failure of the related flight control module.

#### *Autopilot Check*

1. Ensure IRUs are in the NAV mode
2. A/P ENGAGE Switch \* \* \* CMD A
  - Wait 10 seconds, and verify light remains ON

3. Disengage A autopilot
4. A/P ENGAGE Switch \* \* \* CMD B  
–Wait 10 seconds, and verify light remains ON
5. Disengage B autopilot
6. To fail this test, one autopilot will fail to engage and the other will fail to stay engaged.

**Note:** Failure of the autopilots to engage as described in Step 6. may indicate a failure of a flight control module.

**Warning:** If either Pre-Flight FCM Checks fails, do not takeoff until the failed module has been replaced."

(f) If required by paragraph (c), (d)(1), or (m) of this AD: Revise the Limitations Section of the FAA-approved AFM to include the following statement (this may be accomplished by inserting this AD into the AFM): "If a flight control module (FCM), having P/N 65-44891-7 with S/N 8726 or greater is installed, the 'Pre-Flight Flight Control Module (FCM) Checks' specified in the Normal Procedures of this AFM must be accomplished before each flight. If either Pre-Flight FCM Checks fails, do not takeoff until the failed module has been replaced."

(g) If required by paragraph (c), (d)(1), or (m) of this AD: Revise the Non-Normal Procedures Section of the FAA-approved AFM to include the following (this may be accomplished by inserting this AD into the AFM):

#### *Flight Control Module (FCM) Failure*

**Note:** If the module fails in flight, neither A nor B autopilot will engage. Other indications include possible increase in flight control forces (similar to manual reversion) and possible yaw damper disengagement.

Failure of a second module in flight could result in serious degradation of airplane controllability, including high control forces.

If a failure is suspected in flight:

- Plan to land at the nearest suitable airport
- Crosswind capability may be reduced
- Do not turn off any flight control switches
- Plan a flaps 15 landing
- Use VREF 15 + 5 or VREF ICE + 5"

**Note 2:** The Limitations, Non-Normal Procedures, and Normal Procedures specified by paragraphs (e) through (g) of this AD are required to be implemented only for airplanes on which suspect FCMs have been installed. However, individual pilots may operate other airplanes on which those suspect FCMs have not been installed, and that are not subject to those limitations and procedures. Therefore, to avoid any confusion or misunderstanding, it is important that airlines have communication mechanisms in place to ensure that pilots are aware, for each flight, whether the Limitations, Non-Normal Procedures, and Normal Procedures apply.

## **Failures Detected During "Flight Control Check"**

(h) If any failure is detected during any "Pre-Flight Flight Control Module (FCM) Checks" specified in paragraph (e) of this AD, or during operation of the airplane, before further flight, replace the affected FCM with an FCM identified in paragraph (c)(1), (c)(2), or (c)(3) of this AD.

## **Reporting Requirement**

(i) Submit a report of inspection findings to the Boeing Renton Airline Support Manager, Craig Blankenstein, 2925 South 112th Street, Seattle, Washington 98168; fax (206) 544-9698; at the applicable time specified in paragraph (i)(1) or (i)(2) of this AD. (The report must include the airplane line number and FCM P/N and S/N.) Information collection requirements contained in this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(1) For airplanes on which the inspection required by paragraph (a) of this AD is accomplished after the effective date of this AD: Submit the report within 10 days after performing the inspection required by paragraph (a) of this AD.

(2) For airplanes on which the inspection required by paragraph (a) of this AD has been accomplished before receipt of AD 2002-19-51: Submit the report within 10 days after the effective date of this AD.

## **Part Installation**

(j) For all airplanes: After the effective date of this AD, no person shall install an FCM having P/N 65-44891-7 with a S/N 8726 or greater, on any airplane, unless the compensator has been replaced with a compensator, approved for installation on FCM, P/N 65-44891-7, other than a compensator having P/N 10-60560-3 with S/N 20478A or greater.

(k) After the effective date of this AD, no person shall install a compensator having P/N 10-60560-3 with S/N 20478A or greater, on any FCM.

## **Alternative Methods of Compliance**

(l) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

**Note 3:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

## **Special Flight Permits**

(m) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished, provided that the airplane is operated per the requirements of paragraphs (e) through (g) of this AD, and that there are no known FCM failures upon dispatch.



**Effective Date**

(n) This amendment becomes effective on October 15, 2002, to all persons except those persons to whom it was made immediately effective by emergency AD 2002-19-51 R1, issued on September 18, 2002, which contained the requirements of this amendment.

Issued in Renton, Washington, on October 1, 2002.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 02-25458 Filed 10-4-02; 8:45 am]

BILLING CODE 4910-13-P